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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/403,487	10/22/1999	MASAYUKI OKAMOTO	1248-467P	7363

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EXAMINER

CHUNG, DAVID Y

ART UNIT PAPER NUMBER

2871

DATE MAILED: 02/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/403,487

Applicant(s)

OKAMOTO ET AL.

Examiner

David Y. Chung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 4,5 and 8-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 6 and 7 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has argued that the added language wherein "the circular polarizing means selectively passes either right handed or left handed substantially circularly polarized light in the whole visible wavelength range from natural light" patentably distinguishes the claims from the prior art of Sonehara et al. (U.S. 5,361,151). It is unclear whether the claimed device comprises conventional achromatic circularly polarizing means or whether special wavelength dispersion matching for composite retardation has been done. Examiner interprets the claimed device as comprising conventional achromatic circularly polarizing means since the specification does not support any special wavelength dispersion matching techniques.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sonehara et al. (U.S. 5,361,151). Sonehara et al. discloses a reflection-type liquid crystal device having a twisted nematic liquid crystal layer and a circularly polarizing element on the incident side of the display. Note in figure 10, the twisted nematic liquid crystal layer 1004, substrates 1001 and 1003, reflector 1002, transparent electrode 1005, and circularly polarizing plate 1006 comprising linear polarizer 1007 and phase plate 1008. In this embodiment, phase plate 1008 is a quarter-wave plate. See column 6, lines 17 – 43. In the present invention, $\Delta n d = 0.2$ and the twist angle of the liquid crystal layer is approximately 60 degrees.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Sonehara et al. (U.S. 5,361,151) in further view of Itoh et al. (U.S. 6,362,862). Although Sonehara et al. does not disclose a circular polarizing means comprising a linear polarizer and two compensator plates, Itoh et al. discloses using two compensator plates whose composite retardation value coincides with the retardation value of a quarter-wave plate. See column 8, lines 10 – 21. See also figures 8 and 10.

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- Therefore, it would have been obvious to one of ordinary skill in the art that using two separate compensators was a functionally equivalent alternative to using a quarter-wave plate in order to produce circularly polarized light. Furthermore, the exact retardation value and angle of disposition of each compensator are result effective variables, whose determination would have been obvious to one of ordinary skill in the art.

Claims 6 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Sonehara et al. (U.S. 5,361,151) in further view of Itoh et al. (U.S. 6,362,862). It was well known and obvious within the art to use a compensator to cancel a residual phase difference of the liquid crystal layer. Compensators were conventionally used to correct for a birefringence of the liquid crystal layer.

Response to Arguments

Applicant's arguments filed January 6, 2003 have been fully considered but they are not persuasive. Applicant has argued that curve 1102 of figure 11 illustrates a black display with reflectivity only in the vicinity of 550 nm and that Sonehara et al. is limited to circularly polarized light having monowavelength. Examiner notes that the reflection spectrum of curve 1101 is substantially across all visible wavelengths. Furthermore, curve 1102 is the same as curve 1101 but with the polarizing plate angle set at 83 degrees. See column 6, lines 44 – 53. Therefore the display of Sonehara et al. passes circularly polarized light in the whole visible range when the polarizing plate angle is set at 90 degrees as shown in figure 11.


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Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Chung whose telephone number is (703) 306-0155. The examiner can normally be reached on Monday-Friday from 8:30 am to 5:00 pm.


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02/21/03